

*In the Author's
best respects*

THE
ASPECTS OF MEDICAL SCIENCE.

An Oration,

DELIVERED MARCH 8, 1860,

BEFORE

The Medical Society of London,

ON ITS

EIGHTY-SEVENTH ANNIVERSARY.

BY

JOHN GAY, F.R.C.S., &c.

PRINTED BY REQUEST.

LONDON:

EFFINGHAM WILSON, ROYAL EXCHANGE.

1860.

LONDON :

PRINTED BY J. KING AND CO., QUEEN STREET, CANNON STREET, CITY.

TO JOHN HILTON, Esq., F.R.S., &c., &c.,

PRESIDENT

OF THE MEDICAL SOCIETY OF LONDON

DURING THE SESSION 1859—60,

THIS

Oration

IS INSCRIBED,

WITH ALL ESTEEM AND RESPECT,

BY HIS FRIEND

THE AUTHOR.


Advertisement.

THE following Oration is printed at the express request of the Fellows of the London Medical Society. It must be evident, from the time allotted to its delivery, that the various subjects introduced could only be treated of cursorily,—a circumstance which alone would have made the Author hesitate in giving it publicity, had he consulted his own inclination. For the same reason, in its delivery, the Author omitted portions which, in publishing it, he has thought proper to restore.

For the whole, the Author seeks that indulgence which is usually conceded on behalf of a work not originally designed or prepared with a view to its publication.

10, *Finsbury Place South,*

April 25th, 1860.



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MR. PRESIDENT,

The Medical Society of London has provided that an Oration be delivered annually to commemorate its foundation and progress. And it is well that this custom should be scrupulously observed; for, as time flies and changes mark its briefest periods, so it becomes us, its Fellows and friends, periodically to halt in order to see whether the last has been a year of advance or retrogression; whether the events by which it has been marked have increased the usefulness and stability of the Society, or have impressed upon it the indications of degeneration and decay; and, from the retrospect to form new and correspondingly higher resolves, as the past may, or may not have given satisfactory pledges for the future.

Eighty-seven years have gone their wonted round, since this—the elder of the existing Medical Societies of the Metropolis—arose under the parental auspices of Dr. Lettsom. Those who have gone before me in the performance of this honourable duty have, with powers of eloquence and delineation far exceeding any that the present speaker can command, traced its history and the lives of those illustrious dead whose names decorate the scroll on which its annals are inscribed. It is not for me, therefore, to reiterate their praise. The voices of Jenner, Fothergill, Haighton, Babbington, and of others in that long list, are still heard wherever Science and Literature are cultivated among the sons of men; and their memories are enshrined in the hearts of all who regard the advancement of the Human Species, through a progressive acquaintance with man's physical as well as his moral being and relations, as one of the noblest objects that can

engage their time or understanding. Many of those whose names adorn the Society's walls have passed "to where beyond these voices there is peace;" but in the organization of that Society which they have bequeathed to us, they have left the impress of their zeal and efforts for the promotion of a cause as dear to them almost as their social hearths or most cherished friendships.

In its records we trace the usual indications of a chequered existence; but, for the most part, we discern the strivings of stalwart men, engaged in disinterested effort for the advancement of their Art. And, if in *some* of its pages we read of strife and party-feeling, such as may, for a time, have served to "mar its fair image" and imperil its existence, we may be assured that these dissensions but express the value these great men set on the object for which they struggled; and those perils, the rock-like stability by which it was enabled to stand against and outlive them.

And its later history has not much varied from that of its earlier epochs. In *our* keeping the Medical Society of London has had to encounter phases of difficulty and trial; and if, through a diversity of opinion and views amongst its Fellows, the seats of some few of its most valued friends have of late, unhappily, been vacated, let us entertain a hope that, for the memory of those venerable Fathers of our Society who, in spirit (we trust) are with us as, night after night, their glowing features beam from the canvass which hangs over the Presidential chair;* for the sake of the many friendships which have

* This interesting picture, painted by Medley, and engraved by Branwhite, represents a Meeting of the Old Society, and includes likenesses of the following Members:—Dr. Sims, Sir John Hayes, M.D., Drs. Lettsom, Saunders, Hulme, Jenner, Woodville, Relph, Walker, Myers, Bancroft, Babbington, Combe, Akin, Bradley, Thornton, Shadwell, Haighton, Hooper, Ford, and Messrs. Ware and Blair, Surgeons.

sprung up within its precincts, and which a common sympathy in a noble cause has served to cement; as well as for the sake of that Divine Art to which its services are dedicated, and which sheds a peculiar lustre on all sacrifices made in its behalf; let us hope, I say, that any whose fealty to our Society might have been weakened may, by such considerations, be induced to pause ere they allow it to perish.

Our Society belongs to a Profession which, without disparagement to any other profession or calling, claims, from its varied and opening bearings on the interests and destinies of the human race, a foremost place amongst the means by which they are to be advanced. And I do not know that I can better employ a portion of the time, allotted to me on this occasion, than by taking a cursory review of some of the grounds on which it may seek to justify its claim to this distinction.

If we look back into the recesses of antiquity, and compare the Science of Medicine with the Sciences of Theology or Ethics, we shall, I think, find that it has pursued a more even and uncorrupted course than either; in speaking of Theology, let me not be supposed to allude to the "Divinity that stirs within us," which raises us above the instincts of the hour, reveals our relationship with the Father of Spirits, and in the breast of the most untutored savage imparts, from the cultivation of his ruder virtues, the hope of some "humble heaven beyond yon cloud-capped hill." No, Sir, it is not to the *spirit* of religion to which I allude—that is *one*, and *immutable*—but to the theories or scholastic systems which have emanated from it. These, as well as those principles of justice which lie at the foundation of social order and right, have, from their persistent conformity to the external influences of nature and conditions of society, assumed so great a variety of aspects as to justify the conclusion that there is a Geography of religion and of laws, as there is of lands; that, in other words, although Human Nature is

everywhere the same, yet is every clime distinguished, not only by its limits, but equally so by its laws as well as by its doctrines and rules of faith.

If it be true, as Adam Smith has ingeniously alleged, that the existing laws and principles of commerce may be traced back to their origin in the rudest and simplest act of barter; we may, by a parity of case and reasoning, contemplate the earliest dawn of the Healing Art in the existing therapeia of the most savage tribe. Groaning over the "ills that flesh is heir to," the denizen of the wilderness, after much patience and seeking, finds wherewith to cure a particular malady in some one of the herbs that spring, without his bidding, around his rude abode, or in the waters that gush up from unheeded depths beneath his familiar rocks. In this manner the New Zealander discovers a therapeutic power in the little "edible fern" (*Pteris Esculentus*) as well as in his native alkaline and sulphurous springs; and, if the exorcisms of his priest-physician fail him in the hour of need, he is assured that his tiny herb and his strange waters will not. Thus he realizes a simple fact and a simple faith, and heeds not that such elements are at the foundation of every successful step by which his humble Art is connected with its highest form of development, amongst his brethren at the other extreme of the scale of civilization.

For, if we trace it through societies as these progress towards higher ranges in the social system, we find that our Art has constantly been advanced through the acquirement of such rudimentary materials; and that it is not by any change in the nature of its elements, but by their submission to a process of observation and of analysis, whereby they have been made to evolve general truths, and, by a higher generalization, still more particular laws, that it has been raised to the rank of a legitimate Science. As, then, the Art of Healing has, in all

countries and in all ages, been based upon close and accurate observations derived from a study of Nature, and upon these alone; so, like Nature, has its course been *unchangeable*. It has sought no other source, and has rejected all that is independent of it.

And thus I am led almost insensibly to another remark; viz., that our Science is distinguished by having made every advance in strict conformity with the rules of that inductive philosophy, the analysis and exposition of which are the boasted achievements of the seventeenth century. In his celebrated treatise on "Antient Medicine," Hippocrates refers the causes of all diseases to *realities*, and not to those vague and imaginary *abstractions* to which his predecessors attributed them. "Wherefore," says the Father of Medicine, "I have not thought that medicine stands in need of an empty hypothesis, like those subjects which are occult and dubious; in attempting to handle which, it is necessary to use an hypothesis, since there is nothing to be referred to in order to discover the truth." This ancient polemic stands in remarkable apposition to the equally celebrated dictum of the author of the "Principia," "that whatever is not deduced from phenomena is to be called an hypothesis; and hypotheses, whether physical or metaphysical, whether of occult qualities or mechanical, have no place in experimental philosophy." And, if we follow our Science from its starting-point into that dark period of history which followed the downfall of the Roman Empire, we shall not fail to observe that, when it was all but extinguished, when its votaries were driven into seclusion within the precincts of Monasteries and the Colleges of Bagdad, Salerno, and Pavia, and were thus in a great degree excluded from the observation of Nature, they fell back upon the study of the works of Hippocrates, Galen, and Celsus, as did the true philosophers upon those of Aristotle. Thus, not only were its disciples com-

paratively uncorrupted by the superstition and mental torpor that prevailed around but the Vestal fires of our Science were kept alive, and though they glimmered but faintly, still they glimmered until, with the general illumination which accompanied the revival of learning, they burst forth anew to do homage to that "instauration" of philosophy, of which that Science had been for centuries a silent but faithful expofitor.

I may be pardoned if I remind such a learned audience, as that which I have the honor to address, of the great names which are associated with the revival of the Healing Art in Europe; and I do so to shew that there has been a natural sequence in the evolution of those Sciences, or subsidiary departments of Medical Science, which, from time to time, have sprung into existence as accessories to its general purposes, and the means by which it to work them out.

In doing this I must shew *how* the study of Anatomy, revived by Versalius in the sixteenth century, was followed by the more special "Observations" of Fallopius, by the works of Columbus and Eustachius, of Albinus and Pecquet on the Bones, Muscles, and general Vascular system, and of Malphigi, Wharton, Nüick, and Graaf, on Splanchnology. *How*, after the study of special Anatomy, that of Physiology followed genetically, revived by the illustrious Des Cartes, Harvey, and Entius. *How*, upon this, Swammerdam, Spallanzani, and Trembley, initiated the study of Comparative Anatomy;—the former by his "Historia Insectorum," the latter by his work "Sur le Polype d'eau douce." Following up the links in the chain: *how*, in the course of a few years afterwards, the nature of the "vital powers" began to be investigated by Boerhave and Haller; Animal Electricity by John Hunter, through his dissections of the Gymnotus; the Organs of Special Sense, by Fen Sleigh, Porterfield, Camper,

and Wilson ; and lastly, Psychology and the mysteries of man's Spiritual Nature, during the last thirty years of the eighteenth century, by Ploucquet, Platner, and Metzer.

Contemporary with the rise and progress of our knowledge of the Human organization, we find the study of Chemistry assuming definite aims and proportions ; but it was not until the time of Boerhave and Haller that, emerging from its rudimentary state as well as from the trammels of the Neo-Platonic philosophy, it became engaged side by side with Anatomy and Physiology in unravelling the complex nature of the living functions. No sooner had Scheele, Rutherford, and Cavendish discovered the principal constituents of the atmosphere, than the enquiry into the nature of the respiratory process in man and the lower animals was commenced by Priestly, Whytt, Hunter, and Darwin, (the latter of whom shewed that venous blood, *in its circulating vessel*, contains a large quantity of gaseous fluid in a state of compression,—an observation which has recently been subjected to the test of experiment with but partially confirmatory results by Fernet) and followed up by Vicq D'Azyr, Menzies, Coleman, Spallanzani, and others. An enlarged acquaintance with the Human organization speedily led to the initiation of another important—nay all important—branch of our Science ; viz., Morbid Anatomy. So that, in the “Sepulchretum” of Bonetus, the “De Sedibus et Causis Morborum,” of Morgagni, and the admirable “Institutiones” of Gaubius, we discern, towards the end of the last century, the first real elements and basis of modern Pathology.

I need not approach nearer our times, and seek in the splendid facts which have been added to the arcana of Medical Science, and the methods by which these have been attained, a confirmation of the view which led to the remark that, from its earliest dawn, that Science has been advanced solely by methods which are in strict accordance with those principles of

inductive philosophy, which it was the mission of Bacon and Newton in comparatively modern times to unfold and promulgate.

But, Sir, there is one other consideration which I cannot forbear mentioning before I leave this part of my subject.

If we again compare Hippocrates with Bacon, we shall observe that not only did these illustrious men share in a common contempt for "vain conceits and abstract principles," but they were equally concerned to shew that it is the legitimate end and purpose of knowledge to bring "relief to man's estate,"—to "endow and benefit human life,"—and that the realization of such objects brings more glory to the human intellect than any that can accrue to it from the greatest triumphs of philosophic fiction or rhetorical Art.

Before the annunciation of "Peace and good will" to the shepherds of Judæa, and whilst the schools of Athens were teaching men to be cynics, the practice of the Healing Art was busily engaged in awakening, in the midst of society, sympathies which had perhaps slumbered for ages: for although the philosophy of Plato contemplated the elevation of man's spiritual, to the level of that conception of the Divine Nature, which its subtle reasonings endeavoured to idealize, yet it missed its aim through a disdain of those attributes of mercy and charity which are symbolized in the "human heart." It was essentially *heartless*; and tended to the disruption of the ties of *human* sympathy, for an ideal alliance of humanity with a spiritual nature purified from the dross of earthly alloy.

Whilst the Athenian was inculcating that the Science of Medicine was of disputable advantage; and that its exercise should only be tolerated for the purpose of relieving the sufferings, or prolonging the lives of those only who were fitted by nature for the loftier duties and offices of the commonwealth; the physician of Cos and his coadjutors were engaged

in consecrating temples, on every hill-top, to the service of the goddess Hygeia. To some one of these temples the proud Greek would cast his longing eyes ; and, true to the sentiments of his nature, as he poured out his fervent aspirations that hope, if not solace be vouchsafed him, in moments of anguish or in the throes of death, his sympathies must have been quickened, and he must inwardly have rejoiced that these sacred fanes were in sight, if not within reach of all who felt the same need of their influences as himself.

In this manner, I conceive the practice of our Art has, from the earliest ages, been eminently serviceable in calling into active exercise those charities, between man and his fellow man, which the philosophy of Greece regarded with indifference, if not with contempt ; but which Christianity deigns to employ for the purpose of bringing in that better age when “ violence shall be no more heard in the land.”

And thus tradition has awarded to the true physician, as habit and education have imposed upon him, the cultivation of that manly philanthropy which has shone so conspicuously in his conduct and character wherever he has had a mission to fulfil. If the barbarian is to be tranquillized, or the rage of the tyrant assuaged ; if solace is wanted in the moment of nature's severest trials ; if fortitude needs constancy, or the hour of death the consolation of a friend, he is ever ready, as he is eminently qualified for the discharge of such sacred offices. When that arch-bigot, Charles IX, was engaged in his horrible design of putting the Huguenots to death, he was suddenly checked in his career. Was it by the spontaneous reproaches of an awakened conscience ? No. He was confronted by Ambrose Parè ; and, in deference to his Christian expostulations and demeanour, his sword was sheathed and the monarch is said to have wept that he had shed innocent blood.

But let us turn to other considerations connected with

the present aspect of Medical Science on the well-being and progress of Society.

The world is stirring as it has never stirred before.

For the prosecution of his schemes, man subsidizes the productions of every country and clime that physical Geography has opened to his adventurous and impatient spirit, the last discoveries in every branch of Science, powers that brook no obstacles to their course, and even influences and emanations that reach him from the orbs of Heaven. In displays of mechanical wisdom and skill, he has far transcended aught that the annals of a Cheops, a Sesostris, or a Mausoleus record; for he has gone far to annihilate the most ancient and formidable barriers to his progress—time and space. And this, not from that spirit of vain ostentation, and with that merciless waste of life and labour, which marked the rise and completion of those prodigies of enterprize to which I have referred, but in obedience to that spirit of utilitarianism which exalts *man* just in proportion as he becomes *man's* friend and benefactor.

And if in those Divine Arts which, by means of the ideal, speak to the inner man and help to reveal a spiritual nature by the consciousness which they impart of *their* power to refine and ennoble it; if, in reference to these Arts—to Sculpture, to Painting and to Poetry,—we turn our minds back to the creations of a Phidias, a Raffaele, or a Dante, and are disposed to feel that the age of dwarfish minds has come, and that the “former days are better than these;” let us remember that prejudice is the most formidable antagonist to truth, that Art has a future as well as a present, and that whilst we reverence the culminating prodigies of its ancient types, we may concede our hopeful admiration to the works of a Flaxman, a Millais, and a Tennyson, recognizing in them the enunciation of new principles as a

fresh basis for nobler altitudes than these Arts have ever yet reached.

But has the Science of Medicine participated in this general progress? I think this question may be safely answered in the affirmative. Then *why* such a comparative indifference amongst mankind to the marvels of discovery which have marked its course? Why is it that in solemn assemblies, and by learned men, it has been spoken lightly of? And why has it not driven empiricism and imposture from the land, as Astrology was put to flight by Astronomy, and the Cabbalistic Arts by Chemistry? I do not ask why the discovery, in our system, of a planet whose magnitude and orbit had been synthetically determined through the astounding resources of mathematical reasoning and calculation, should have wreathed the brows of an Adams with immortal laurels? Such honours are *more* than deserved. Mankind have not learnt to be too lavish of their homage to the heroisms of intellect and labour. But, I ask, why the fruits of at least equal industry and zeal, if not of intelligence, obtain comparatively no popular acknowledgment, when their design is to contravene the ills that mostly afflict society,—that too often embitter the enjoyment of life, imperil and even destroy its uses, and send thousands from “the vineyard” long before their “sun has set”? It is, Sir, I venture to submit, because Medical Science is in the least degree pretentious. It proffers no astounding claims for the sake of a world-wide plaudit; and, perhaps still more, because it has not *yet* attained to an acquaintance with that higher range of laws to which the “exact sciences” owe their magical influence, especially over uninitiated minds. The world loves marvels and magic, so long as it does not comprehend them. It is not tired of wondering that the earth’s shadow should pass across the moon’s disc within a moment of its predicted time, whilst it has long ceased to shew

any surprize that, by the help of some general law, applicable to these and analogous compounds, Morton and Simpson should have inferred, from the formulæ of ether and chloroform, their remarkable powers over the living organism. And for the same reason the conceits of the most impudent charlatan have at first been more generally welcomed and more highly esteemed than the discoveries of a Faraday, a Liebig, or a Brewster.

I will not longer dwell upon these somewhat discouraging reflections, but proceed to others which are calculated to have an opposite tendency. And, in proof of the position I have taken up, I purpose to take a review of some of the most important results that have followed the advancement of Medical Art. Perhaps the *most* important result, as far as its *immediate* consequences and aims are concerned, is the development of "Sanitary Science."

Five hundred years ago it was, perhaps, as well known as at present that bad health, a high rate of mortality, and the outburst of epidemic diseases were due to bad air and bad food; but how to render the former pure, or what is the connection between the latter and the nutritive requirements of man that should render it poisonous, were questions which the age was impotent to solve. Three centuries of comparative indifference passed away, although Bacon had said that the prolongation of life is the most noble of all the aims of Medical Art;—for, "though the world be but as a wilderness to a Christian travelling through it to the promised land, yet it would be an instance of Divine favour that our clothing, that is our bodies, should be little worn whilst we sojourn here;"—and the filth and overcrowding of populous towns and cities increased, until at length the Great Plague of London created an alarm in the land, and the magnates of the "Royal Society" were consulted. The whole matter was diligently examined, and, by the suggestions of that

body, such improvements were made in architecture, drainage, and ventilation as had the effect of putting a final close to its visitations. Still, their labours, though effective as far as their immediate results were concerned, were far from meeting the public need; and even these were abandoned as soon as the silent dread occasioned by the visitation had given place to the reaction of riot and revel.

Another century and more elapsed; and, the evils of the Factories having attracted the attention of a Thackrah and a Sadler, a band of philanthropists arose determined to try the experiment of applying acknowledged sanitary measures to these dens of disease and death. The illusion, that the Factory System could not exist apart from the annual hecatombs of thousands of defenceless women and children, was soon dispelled; and not only so, but the still more valuable discovery was made, that labour is the more profitable to the employer as it is the result of a healthy and happy activity. The Medical Profession took up the subject in earnest; but it was not until 1838 that it was conceived to be of sufficient importance to demand the notice of Lord John Russell, the then "Home Secretary." From that time the public health became a matter of state concern. The statistical method of induction was applied to the results of a large number of well directed and valuable observations; and the important truth elicited, that nine-tenths of the entire mortality of this country occur *prematurely*; whilst of the deaths that are premature, a very large proportion is induced by diseases which, in the most absolute sense, *are* preventible. Here then was disclosed an opportunity of giving to Medical Science a more practical turn, and a more surely attainable aim, than was ever before afforded to it; an aim which, in the fulness of its proportions, may be said to contemplate the extermination of disease, and thus to impart to human life its normal vigour and duration. And that such an aim

may fairly be contemplated is shewn by the fact already acknowledged, that obedience, even to *some* of the laws of Sanitary Science, ensures on the part of the human family a successful resistance to the invasion of a class of zymotical diseases which, when uninterrupted in their course, are known to be prematurely destructive to it, in the ratio of 25 per cent.

All honour, Sir, to that staff of brave men who form the Sanitary Body in this as well as in all other parts of the world ;—men of faith, fortitude, and self-denial—of *faith and fortitude*, because they are not dismayed at the difficulties or magnitude of their task ;—the object of which is to save 100,000 annually even in these “sea-girt isles” from an untimely death, and at least 1,000,000 from that enfeeblement of mind or body which constitutes them drags, instead of help-mates with their fellow-citizens in the cause of the general weal ; and of *self-denial*, because it is their lot

“To wait on pain
And silent Arts to urge, inglorious.”

And this is no fairy vision, created by the wand of the enchanter. It is a reality of which society has already had an abundant earnest. The first fruits of the labours of this zealous band have already been gathered. The rate of mortality in this country has already been appreciably diminished. In Liverpool, for instance, from 37 per 1,000 to 27 ; in Bradford, from $28\frac{1}{2}$ to 22 ; in Gloucester, from 27 to 24 ; and in other places to a proportionately important extent. In Croydon, for the last five years, we are told by the Registrar-General, 196 lives have thus been annually saved ; and, as a proof that this is due to the operation of sanitary measures, we are told that the female prisoners at Brixton, under its regulations, are three times as healthy as the poor half-famished, hardly-entreated, yet honest needlewoman of our metropolis ; whilst at the Pentonville

Prison the death rate is only one-third of that which prevails in populous towns.

It is not the mere fact that millions of lives have been lost, with their accumulated prodigies of physical power and intelligence, which might have been saved through "wisdom and understanding;" but as in the work of evangelizing the world "not many noble were called," so in that of civilizing it, the same principle, in the selection of means, has been closely observed. It was not from regal halls, and the palaces of the great, but from the common abodes of mankind, that a Newton and a Locke, the bard of Avon, the "poet ploughman of Scotia," and *he* of the "Corn Law Rhymes;" that the discoverer of Neptune, who had no talent for the plough or for cattle-tending; that Hutton, Bewick, Savery, Telford, Stephenson Gibson, and Livingston, arose to deeds—

"On which the morning sun may shine,
As changeful ages flow,
With gratulation, thoroughly benign."

No! Men and women have arisen to the dignity of benefactors of their kindred from the lurking holes of the destroyer, and through various tracks of ignominy, danger, and endurance, as well as from courts, and through paths of luxury, or the ancient seats of learning.

And if, from such reflections, we may fairly calculate that many a spirit endowed for high and noble purposes has thus been quenched prematurely, as buds by an untimely frost; and that thus human society has accomplished less, and is less fair in so far as it has been deprived of the leaven which such spirits would have infused into its councils and operations, we may, I think, look forward with a prophetic eye to future generations which shall teem with bards and heroes, and men of prowess in every department of human enterprise, snatched by Sanitary

Science from the usurped dominions of the King of Terrors ; and to correspondingly gigantic steps in the course of civilization, compared with which its present advances are but as “ drops before the shower.”

You members of the Sanitary Body who toil in obscurity, amongst all that can pollute and defile, in haunts hardly visited by the light of day or even where it has never penetrated, exposed to perils that lurk, unseen, around your footsteps, and doubtless borne down, at times, by the mass of moral and physical evil against which you have to contend, you have little acknowledgment of the worth of your labours, or recompense for the sacrifice they entail ; but still your reward is sure, for the destinies of the human race claim you as their ministers, and it is in their service that men and women have become as the constellations of heaven.

But I cannot proceed without singling out, from the names of those who have distinguished themselves in such works of philanthropy, that of one who has been removed from our circle and our Society since its last Anniversary Meeting—John Snow. Dr. Snow had been long a Fellow of the Medical Society. At its meetings he was a frequent attendant ; and in its councils he was guided by a spirit of practical wisdom, as well as by unimpeachable purity of motive. He never rose in the course of discussion without commanding that respect and attention which have been accorded to his memory. He was single-minded and sincere ; and, although in his later days he enjoyed a large share, not only of professional but of regal favour and trust, yet did he never forsake those labours, the results of which he conceived to be of the deepest import to the interests of the poorest of his fellow mortals. He fell at his post, a true Christian and a practical philanthropist. His views, as to the propagation of cholera, were based upon a large number of hardly-obtained and valuable observations ;

and there is every reason to believe, if they do not involve *all* the causes of this terrible epidemic, or even those most constantly in operation, that still they contain a certain amount of truth which will materially help to elucidate the mystery by which its real nature and sources are still encompassed.

I cannot quit this part of my subject without making some allusion to the influence on some other of the great questions of our time, which the advancement of Medical Science is calculated and likely to produce.

The maxim cannot be too often repeated that "the proper study of mankind is man;" and this is, perhaps, more just when applied to his organic, than to his moral being; since every attempt at the elucidation of the latter, independently of the former, has proved to be vain and fallacious. And one is prone to wonder, at times, that so many ages should have been allowed to pass away before man ventured to gaze into those mysteries of his existence which are wrapped up in his living organization; and that not until a very recent period the study of human anatomy should have been encouraged in our land by an Act of the Legislature.

Man—the highest of the Almighty's works, of which we have any cognizance,—holds such a relation to his appointed dwelling-place, that there is not, in all probability, one portion or single constituent of it, which has not a distinguishable, if not an important, affinity with some one or more of the elements of his being. And not only so, but the more we know of his nature, as revealed through the structure and functions of his physical being, the more do we find a fitness to all that concerns *its* safety and *his* progress in everything by which he is surrounded.

With enlarged knowledge, the powers of the external world are stripped of the hostility with which ignorance invests them; and Science discovers that there is not a single atom

or combination of atoms—whether they be those which, leagued together in deadly agency, have defended Continents against man's usurpation, and oft risen in treacherous mutiny against his rule ; or whether they be such as quicken, to appalling energy, in the earthquake or the thunder-storm,—but may be enforced into true and fruitful allegiance with him. As the necessities of his being become gradually unravelled by a more and more intimate knowledge of his organism, so each will find its counterpart in the resources of the realms of nature ; and order and harmony will be progressively evolved out of a state of primal discord.

Again, Sir, the study of man is replete with lessons of the most practical character and import ; and, in *this* light, I cannot but think its uses have not had their legitimate recognition.

If, to the mind of a Newton, a globulizing bubble suggested the law which rounded the earth, and a falling apple that by which yon orbs keep their appointed bounds ; of how much that is practically serviceable to man, might not a more intimate acquaintance with the mechanism and contrivances of the animal economy be suggestive, even to lesser minds ? If man had been more familiar with this knowledge in that period of his history when, beginning to feel the need of mechanical contrivances, he was led to rebel against the thralldom of that philosophy which reproached Democritus for his having contrived the first arch, and Anacharsis for having descended to such base inventions as those of the anchor and the potter's wheel, might not many of the discoveries of later days, which so materially affect his convenience and welfare, have been antedated ? For “in general,” as Lord Bacon, remarks, “those very things which are considered as secret are manifest and common in other objects ; but will never be clearly seen if the experiments and contemplation of men be directed to themselves only.” Long before the boast

of Archimedes that, with the aid of a fulcrum, he could move the world, the lever, in every form in which we know it, existed in the human frame. Whilst Vitruvius was exulting in his bucket-pump contrivance, and the geometrician of Syracuse, in his screw for raising water, the type of the modern forcing-pump was engaged in carrying on the human circulation. To an ingenious mind, the elaboration of heat and force, by the changes in the blood during its passage through the capillary system, *might* have suggested the generation of power by the formation and condensation of steam, long before its discovery by Salomon de Caus, and its marvellous practical application by Savery, Watt, and Stephenson. And it is not impossible but that, by a like inferential process, an earlier acquaintance with the structure and functions of the Nervous System, as promulgated by Bell and Hall, and latterly by Dr. Draper of New York—the inferent and efferent thread, with its intermediately placed registering vesicle—might have led to the earlier invention of the Electric Telegraph?

And has man exhausted all those stores of Divine and practical wisdom which the Creator has implanted within the boundaries of his own microcosm; and in working out his problems of Art, does he not too habitually overlook them?

But again, has man made the best use of those abundant instances in which, by a mutuality of exposition, the phenomena of the external world may be made to expound those of the vital actions? It was long ago known that the secondary piles of Ritter, after having been brought into contact with an active voltaic circle, continue to shew their qualities for some time after the contact has been broken; but it is only recently that this interesting fact has been made the exponent of that conservative power of the ganglionic neural vesicle, by which *its* impressions are likewise retained long after the conditions which produced them have ceased to exist.

I might give other examples of illustrative parallelism ; as, for instance, between the rapidity and ease with which indigo absorbs and releases its oxygen simultaneously with a change in its colour, and those analagous processes which are constantly taking place in the blood of vertebrate animals ; and as a further illustration of my meaning, I might suggest how far the discovery of the laws by which those particles that float, in a state of regular and harmonious diffusion, in the light of a sunbeam, might help to explain that phenomenon of distribution among the globules of the blood, by which these retain their individual isolation, and are thus enabled to circulate in the living vessel.

But I must be content ; and proceed to consider still more important bearings which I conceive the cultivation of Medical Science to have on the interests of the human family.

And, Sir, to these I fear to commit myself, from the breadth and sublimity of the themes to which they introduce me. The *true* Physician is unable to separate man's physical from his psychical nature. The more he knows of its organic processes, the more is he convinced that with every spiritual manifestation there is *some* co-ordinate material change. He is thus brought to the boundaries which connect the seen with the unseen world ; and although he dare not "rush where Angels fear to tread," yet he cannot refuse the guide into those mysterious and hallowed regions, which metaphysical physiology offers him, nor to relate what he finds there. If in his tracings he should err, he is assured that the "light that led astray is light from Heaven ;" and that further illumination is only required in order to discover the error, and to disentangle it, so that the truth be free.

The enquiry must oft-times have overtaken him, as he has passed from the chambers of death and carried with him a recollection of two diverse forms which he has seen there ;—*one*, the wasted and shrivelled victim of penury and vice, the *other*,

the aged labourer, at rest after the toils of his mortal day—what made these to differ? Why, starting apparently from one point, should they have taken so divergent a course, and pursued it to the last? Was the start as fair, and the road as friendly to the one as to the other? And were the circumstances and conditions of their respective journeys of their own creation; or had they been, even to a partial extent, forced upon them? Take a case, and ask why has that poor, lean, haggard “*wretch*” (according to a Pharisaical nosology) issuing from yon gin palace with a starveling at her bosom, lost, at least to outward appearance, the impress of that image in which she was created? Is it enough to refer, in reply, to the “common depravity of human nature?” Then why has that depravity gained such an ascendancy in *her* case; whilst in the *other* it has, to a certain extent, been overcome? Are we satisfied with the response that the principles of a severe theology, or of a rigid code of popular morals, would give? And, if not, shall we pass the enquiry back to the shades of Plato or Manes? It is not the *general*, but the *especial* cause of her “finning” that we seek;—the “moving why.” Let us see how far physiology can satisfy such an enquiry; and I venture to think that the explanation it is enabled to give is, so far as it goes, worthy of acceptance, since it would appear to be in strict accordance with the sentiments of that charity, which “hopeth all things.”

It was long ago shewn by Quètelet that, in a community, crime ever varies in amount: and that not only are the physical peculiarities and conditions of mankind regulated by fixed principles, but also their moral qualities, the impulses of their sentiments and emotions, and even the tendencies to yield to those temptations which issue in crime; although, in particular instances, their influence is secondarily modified by that of laws, education, and moral relations. Moreover, that *crime*

is very closely related in its prevalence to that of *ignorance* and *want*. If from these considerations we turn to Medical Science, we are told, on the authority of organic chemistry that, where these social evils abound, there their half famished and helpless victims turn, not by caprice nor by natural predilection, but by an irresistible instinct of their nature, to the hydrocarbonates—to gin and its allies—as the wretched alternatives by which alone the shortened span of their existence can be eked out;—that when the body is not sustained by appropriate nourishment, life must rapidly be extinguished, unless its embers be kept alive by some extraneous check to the natural waste or decay of its perishable elements; and that such check is afforded to the organization by means of the peculiarly conservative action which spirituous liquors exert upon it. Medical Science, then, helps to reveal “the moving why;” and transforms the gin-enflaved “wretch” into the “hapless child of want.” It is ready to plead for her before the bar of her fellow sinners; and cannot ignore the conviction that, before a higher tribunal, the imperfections of a social system, in which starvation and ignorance are habitually permitted to exist, will be charged as having been at all events accessory to her fall.

“Who knows the heart, ’tis He alone
 Affuredly can try us;
 He knows each chord, its various tone,
 Each spring its various bias.
 “Then at the balance let’s be mute,
 We never can adjust it;—

I shall take one step farther, and endeavour to shew that our Science is not only concerned with man’s physical being, and its moral dependencies; but that by the advances it has made, it supplies (as it were) vicarious but unanswerable testimony to the revealed doctrine of his “immortality.” Its revelations instruct us, in the words of Fichte, “that man shall

BE, and DO something; since his spiritual life will leave behind it in the spiritual world, an imperishable result."

It has been shewn by the labours of Professor Owen, Mr. Dunn, Mr. Lockhart Clarke, and others, that man ranks above an ordinary Vertebrate Mammalian by his possession of a brain distinctly human; its special peculiarity being, that the transverse convolutions of the Cerebrum develop themselves posteriorly into a lobe which overlies the Cerebellum; and *that this lobe is not met with in any other species or variety of the animal kingdom.*

In consideration of this important fact, the genus "Homo" now ranks as the representative of a new and distinct order,—“Archencephala;”—and it is inferred that, with this peculiar cerebral development, the more complex actions of the mind, and that operation of the moral and religious feelings which distinguishes man in the animal creation, are associated. Superadded to this observation, we have the deductions of the physiologist in reference to the relations of the different parts of the neural system. In his admirable work on Human Physiology, Draper shews us that the *primary* arrangement of that system is in the form of *arcs*; of which there are three varieties,—the simple “*Automatic*,” the “*Registering*,” and the “*Influential*;” and that to the highest of these,—the “*Influential*,” the Cerebrum belongs. “Given the structure of the Cerebrum,” says this admirable logician, “to determine the nature of the agent which sets it in action. If in other nervous arcs the structure is purely automatic, and can display no phenomena of itself, but requires the influence of an *External Agent*—if, for instance, the optical apparatus be inert and without value, save under the influence of light—if the auditory apparatus yields no result save under the impression of sound—since there is between these structures and the elementary structure of the Cerebrum a perfect analogy, we are entitled to

come to the same conclusion in *this* instance as in *those* ; and asserting the absolute inertness of the cerebral structure in itself, to impute the phenomena it displays to an agent as perfectly *external* to the body, and as independent of it as are light and sound ; and *that agent is the SOUL.*”

I have ventured on this retrospect of what Medical Science has done and is doing, in order to shew that as it advances so its legitimate domains extend ; and that, beyond the horizon which bounds its present enquiries and aspirations, there are fields of now barren enquiry which will be rendered fruitful by its fertilizing influences.

It has been truly said that “in His communications throughout the universe, God ever materializes ; and our noblest and clearest conceptions of *His* attributes must ever be obtained from material things.” Here then are opened infinite realms of enquiry for the future labours of the Physician. His *present* attainments reveal, for his encouragement, the grandeur of the mission on which he has entered—a mission, the objects of which are, even in its immediate aspects (if there be any truth in the considerations I have advanced), more real and ennobling than any which have been conceived by poet or philosopher ; a mission to bring about a reconciliation between man and those natural powers which everywhere surround him, that these shall no longer interrupt, but go hand in hand *with*, his aspirations for progress towards higher states of being ; and to make man’s own nature the exponent of his obligations to society, of his duties and relations to his Maker, and of his destiny beyond death and the grave ;—in short, to be the hand-maiden to that Power which shall again bring out, as by a sculptor’s hand from a block of rough hewn marble, in all their fullness and beauty, those lost lineaments of the Divine Image, with which his Maker impressed the “first born of creation” when He pronounced him “good.”

“ Utilis est medicus, per quem vixere tot ægri;
Utilior, per quem tot dēdicere mori.”

I now propose to direct your minds to one of the anomalous means by which Medical, as every other Science, makes its advances; viz., by destroying or correcting long-established, but imperfect theories and axioms: and then to some of its more recent and important disclosures.

The Cell theory of Schwann and Schleiden, for instance, —apparently so sufficient in itself as a basis for the explanation of all rudimentary development in connection with vegetable and animal tissues, as well as of their differentiation into healthy, or diseased products, is altogether opposed to the doctrine which was first advocated by Wolff, and has been more recently supported by the researches of Reichert and the arguments of Huxley; and by their investigations, as well as those of the present Professor of Anatomy and Physiology at the Royal College of Surgeons, Mr. Savory, it has been doomed as altogether inadequate and untenable. Every cell is not a *primary* but a *final* product; it springs from its parent cell by a process of endogenous growth; it is endowed with independent life, and exhibits certain reactions when stimulated; and, to its peculiar behaviour under the influences of varying stimuli, the origin of diseased processes is mainly attributable. The same school of observers has given an entirely new view of the nature and properties of what is usually known as “connective,” “areolar,” or “collagenous” tissue; and has asserted that it is not *fibrillated* but *homogeneous*; and that throughout it are certain cellular bodies, similar to, or identical with, those of bone and cartilage. Beyond this, Willich, Kolliker, and others, assert that these cells communicate with each other by means of exceedingly delicate canals, which form a sub-system of vessels for the transmission of nutrient fluids, subsidiary and complementary to the circulation in ordinary blood vessels. That able investigator and physiologist, Mr. Lister, has shewn

the existence of a similar network of vessels and cells in the skin of the frog for the distribution of its pigmentary material; and infers that the movement of the pigment granules takes place not from any force derived from ciliary motion or muscular contraction, but in consequence of *forces, at present unknown, but which are more than adequate to cause the passage of those fluids in the living organism which are engaged in the processes of nutrition, absorption, and secretion generally.*

In thus noticing the corrective tendency of modern discovery, I cannot omit an allusion to the labours of M. Brown-Sequard in connection with the Nervous System. This eminent physiologist has given an entirely new interpretation of the functions of the spinal chord, founded on a great variety of experiments so conducted as to satisfy a Commission of the "Société de Biologie," as well as many witnesses in this country; and which is in harmony with that exposition of its structure which has been given by Schroeder Vander Kolk, and by our countryman, Mr. Lockhart Clarke.

It would be impossible to offer all the emendations which have thus been made, but I may be allowed to glance at a few of the most important. Brown Sequard has proved, in opposition to the teaching of Sir Charles Bell, that section of the posterior columns of the cord, of the restiform bodies, or of the anterior columns, is not only followed by *no* diminution, but by an absolute increase of sensation in the parts below; but that any lesion of the *grey* matter, of any part of the cord, is constantly followed by anæsthesia, the diminution increasing with the extent to which the division is carried; but not to complete anæsthesia until the whole of the zone has been cut through. Hence the smallest portion of the grey matter is capable of conducting sensory impressions. The posterior columns are now regarded as the principal channels for the excitations which produce reflex movements; in consequence

of which any lesion of them is followed by diminished motor power in the parts below. In opposition to the views of Bell, John Reed, and Radclyffe Hall, the decussation of the conductors of sensory impressions takes place in every part of the cord, immediately or shortly after the entrance of the conducting fibres into it; whilst the motor fibres do *not* decussate except above. The direct inferences from these important facts are obvious, and strictly coincide with the results of clinical observation. Again, we are now taught that any lesion of the nervous substance in the medulla oblongata, above the decussation of the pyramids, is followed by loss of both motion and sensation on the opposite side of the body. With regard to the transmission of volitional power, Brown-Sequard has somewhat modified and extended the views of his predecessor, Bell; having shewn that, in the upper part of the cervical portion of the cord, the lateral columns and the portion of grey matter between these and the anterior columns are chiefly employed in this function; whilst, in the dorsal region, it is accomplished by the combined agency of the lateral and anterior columns, and the central grey substance, the two latter having the greatest share in the function.

Time will not allow of my doing more than referring to the important discovery with respect to the influence of the sympathetic on the calibre of the blood vessels, and to its significance in connexion with the subjects of death by shock, epilepsy, &c.,—to the observations that have been made with regard to the rhythmical contractions of gland-ducts;—to the discovery of Eylandt and Henle of smooth muscles in the skin;—to the artificial production of a large number of organic compounds;—to the discovery, of certain undetermined bodies (the corpora amylacea) in different parts of the body, of the presence of indican in healthy urine, and of the blood-making properties of cod-liver oil; but I must make a distinct reference

to recent improvements in our knowledge of the Hepatic functions.

And I do so with great pleasure, because it brings me back to the transactions of the Society which we are met to celebrate.

It was asserted by Galen, that the chyle elaborated in the stomach is passed into the mesenteric veins and liver ; that, in *this* organ, it is converted into blood by depuration, the gall bladder attracting the soft and yellow portion, the spleen that which is thick and muddy, whilst the kidneys separate its more watery parts. From this extraordinarily sagacious view of the function of the liver, more modern physiologists departed, regarding it simply as a bile-secreting organ. We are now informed, through the labours of Bernard, Handfield Jones, and others, that the liver must be looked upon as a huge tonsil,—a vascular gland with, what might be termed, a false duct. Strange would it be, indeed, to Haller and Hunter, to have been told that the liver is not a bile-secreting organ alone, and that it is only the colouring matter of the bile that is separated as a true *excretion*: that its principal functions consist in eliminating hydro-carbonates from the portal blood, in the forms of fat and sugar, for the purposes of respiration and, perhaps, nutrition ; and in assisting to repair the blood, by carrying off the constituents of old and worn-out cells, and maturing young ones to supply their place ; moreover, that, as Kolliker affirms, the bile duct is the common outlet of the spleen as well as of the liver, to which the former is but an appendix. But these are facts. M. Bernard first discovered (what is termed) the “glycogenic” property of the liver ; that, in other words, the liver separates or secretes a “glycogenic” substance, which undergoes a change into sugar within its cells, and is then carried to the heart and onwards to the lungs for decomposition. It has been to the honour of the late Lettsomian lecturer, Dr. Pavy, to shew to the Fellows of the Medical So-

ciety of London, that this eminent physiologist—whose services in the cause of our profession can never be overrated—has, probably, mistaken a *post-mortem* for a *vital* change ; so that, in the living animal, except under the influence of disease, no such conversion takes place ; but that the “glycogenic,” or, as Dr. Pavy prefers calling it, the “amyloid substance,” is carried into the circulation, and retains its form until its final destruction in the lungs ;—that, in fine, it is not converted into sugar at all in the healthy subject.

I cannot pass over this very brief allusion to those lectures without expressing the admiration which all, who had the privilege of hearing them, must have felt at the careful manner in which every step was taken in the process by which Dr. Pavy arrived at his important conclusions. It is not too much to affirm that Dr. Pavy’s correction of M. Bernard’s hypothesis must, if established, be recognized as a great truth in advance, and will contribute to rank his name amongst the most successful physiologists and cultivators of organic chemistry of this or any other age.*

During the Session of the Society’s labours, just now concluded,⁸ many valuable papers were presented at its various meetings ; but amongst the advantages which the Society has recently realized for its Fellows, perhaps there has been none of greater value than that of devoting a third of the evenings to *Clinical* discussion. To present anything like an analysis of the papers, or other transactions of the Society, would be impossible ; but I should not be carrying out what I have regarded as one of the main purposes of these anni-

* It must be admitted, however, that Dr. Pavy’s views have not been generally accepted by Physiologists ; for in experiments of such delicacy, it is extremely difficult to avoid all sources of error. In opposition to them, and in support of those of M. Bernard, I may refer to the paper by Dr. Harley, recently read before the Royal Society.

verfaries, if I did not endeavour to fhew how far its proceedings have been calculated to further the interefts of our Science, and thus to maintain or exalt the pofition of that Society amongft other similar intitutions.

The fubject of "Atmofpheric Changes and their Effects on the Human Frame," was introduced in the early part of the feffion by that indefatigable obferver, Dr. Webfter, whose labours and views are fuch as to encourage further enquiry in this important but difficult department of our Science. A cafe of Diptheria, related by Mr. Rogers, fhewed that paralyfis (in this inftance, of the œfophagæal and pharyngæal mufcles) may occur as a complication. It had been fhewn, by Drs. Maingault and Bouillon Lagrange, that paralytic affections frequently occur as its fequelæ; and Dr. Mackenzie had obferved an exudation, in all refpects refembling that of Diptheria, from the mucous membrane of the Reétum, affociated with intense irritability of the bladder.

Affections of the Cheft have been difcuffed. Dr. James Bird believes that pulmonary tuberculosis, in infantile life, is often preceded by gaftric irritation: in relation to which, there is much reafon for thinking it ftands as its *effect*. From an interefting communication by Dr. Hyde Salter, we learnt that Afthma may occur at any period of life; that it occurs more frequently within the firft decennial period, diminifhes towards middle life, and increafes again with the advance of fenility; and that it does not tend to fhorten life. Dr. Salter fhews farther, that in *childhood* it is ufually bronchitic; in *adults*, a nervous affection; whilst in old age it is moft commonly the refult of combined bronchitic and cardiac diforder.

Dr. Cockle, from fome ftatiftical obfervations made at the City Difpenfary, has fhewn that of the patients attending there, 2.38 per cent. were affected with cardiac difeafe. Of 178 cafes, the mitral orifice was the feat of the affection in 90;

the aortic, in 71; whilst in 17, both orifices were implicated. Dr. Cockle attributes the rhythmic action of the heart to the influence of the nerves, and to that of the blood on the chambers, on the one hand; and to the chemico-vital changes between the blood of the coronary arteries and the cardiac wall tissue, on the other; the two acts being necessarily simultaneous. The phenomenon of reduplication of its sounds Dr. Cockle, as well as Dr. Richardson, considers to be due to the "lagging" of the aorta, in contracting, behind the pulmonary artery, the result of an undue supply of blood through regurgitation.

In reference to diseases of the stomach, Dr. Habershon has contributed important information as to the value of *pain* as a *symptom*. Acute inflammation or organic disease, when confined to the mucous membrane, may be free from pain; as may also any other disorder attended with destruction of the branches of the pneumogastric. Disease extending to the muscular or peritoneal coats, over-distension of the viscus, diseases of its peritoneal investment, and in all probability disease of the pneumogastric nerves, either at their centre or periphery, occasion pain. Disease of the lesser curvature, with irritability of the pyloric orifice, is denoted by pain on taking food. There are many functional disorders free from pain; but when pain occurs with such forms of disorder, it generally arises from impressions made on the spinal and sympathetic neural system. Pain at the scrobiculus cordis often denotes *spinal* disorder, or some affection of the right side of the heart. Some of these views (which are only selections from the general contents of the paper) were brought forward as suggestions; but most of them were illustrated by preparations and drawings from the dead subject; and have, therefore, a special value attached to them.

The serious subject of the excessive rate of mortality in infants has received the valued attention of Dr. Routh, who

attributes it, in most instances, to the use of injudicious food. Dr. Routh referred to the following as the chief pathological indications in these cases ; viz., the *oidium albicans* with *apthæ*, disease of Peyer's Glands, and intensely acid and reddish enteritic discharges.

From Dr. George Johnson the Society has received important communications in elucidation of Bright's disease. Dr. Johnson, after recapitulating the results of his previous labours, showed that the most important "objective" signs are albuminous urine and fibrinous moulds, but that these differ in character according to the stage and gravity of the complaint, and are always invaluable as means of diagnosis. Thus, hæmaturia is a frequent sign of acute morbus Brightii, but seldom of its chronic form. Casts containing cells of renal epithelium, pus, or blood ; or small, waxy and transparent cells, without either, also denote the acute stage of the disease.

The chronic form is attested—

1st. In the form of a large waxy kidney, by the presence of albumen and small waxy casts in the urinary excretion.

2nd. In the fatty kidney, by casts containing oil, with or without altered epithelia ; and

3rd. In the contracted kidney, by granular casts of disintegrated epithelia, large waxy casts, and albumen, although this may be absent.

Dr. Hare has shewn that next to the breast and uterus the liver is the most frequent seat of cancerous disease ; and that its weight, when affected with cancer, is, in the majority of instances, very materially increased—mentioning one case in which it had increased to 198 ozs.

In various communications made to the Society, during the past session, Dr. Richardson has laid down a systematic plan of studying disease, in all its forms, by the synthetical process ; and we are encouraged to hope, by the success of experiments

made by that able Physiologist in this direction, that his method will yield results as abundant and important as those which have been obtained by the analytic method. To have asserted 10 years ago, that endocarditis could be induced *at will*, would have been looked upon with as much suspicion as a like assertion with regard to the artificial formation of a large number of organic compounds. But Dr. Richardson has accomplished this to the satisfaction of the Fellows of our Society. If endocarditis can thus be induced, why not erysipelas? why not pneumonia? why not even cancer? and thus an exposition be obtained of the causes of the idiopathic genesis of these as well as of other forms of disease. But Dr. Richardson's researches lead to other important views. He has shewn good cause for thinking that local diseases are produced by a direct local cause, which local cause may be from these sources;—from without, as when an irritant excites inflammation;—from within, as when the blood bears to the part a poisonous irritant, as the rheumatic or gouty;—and thirdly, from a poison elaborated in the tissues which become the seat of its irritant qualities. The very meagre exposition of Dr. Richardson's recent labours, which I am only able to give on this occasion, is sufficient to attract that attention to them which any suggestion from one so well known must demand.

The pathology of gall stones has been investigated by Dr. Thudicum, who presented important observations in order to shew, as he believes, that they are formed on nuclei which are the casts of bile ducts, and the results of serious hepatic disturbance. Dr. Thudicum thinks that these products, when they cannot otherwise be got rid of, might be removed by surgical operation.

Dr. Tilt has traced various forms of morbid menstruation to pelvi-peritonitis, of which the most important diagnostic sign

is a "femi-elastic swelling, which encircles the lower part of the neck of the uterus."

An important paper has been contributed by Dr. Edward Smith on the "Action of the skin in relation to disease." It would be impossible here to give a resumé of this elaborate paper. I may, however, briefly state that Dr. Smith has concluded from experiment that the skin does not eliminate carbonic acid, but *water*, and this as a vehicle for the removal of certain matters, amongst which are the lactic, capriolic, and acetic acids, all rich in carbon; that its functions are connected especially with those of respiration and assimilation, and are therefore of the highest value in helping us to a knowledge of the nature and extent of diseases associated with those processes; but that its function, "par excellence," is that of a refrigerator of the body, upon the due performance of which the regulation of the supply of blood, in reference to the centres and to the superficies, is contingent.

In Surgery, many important subjects have been brought under discussion. That of "Excision" of joints has been introduced, on more than one occasion, by that earnest champion of "Conservative Surgery," Mr. Price. Mr. Price has shewn that a comparison of the results of excision of the knee joint, with those of amputation of the thigh, is in favour of the former practice. But Mr. Bryant, who has earned a high reputation by his labours in the pathology of articular diseases, makes the comparison less favourable, by taking only those cases of amputation in which it has been had recourse to for disease of the knee joint. Mr. Price has, however, done good service to this subject, by shewing that the mortality consequent upon "excision" is capable of reduction, inasmuch as, in the majority of instances, the fatal results have been due to preventible causes, which, an attainable care in the selection of cases for operation, and the observance of certain rules in their after management,

would render of less frequent occurrence. The facts must not be overlooked ; 1st, that some admirable and striking illustrations of the success which has attended the operation of "excision," have been brought before the Society, from time to time, by those excellent Surgeons, Mr. Jones of Jersey, Mr. Childs, Mr. Henry Smith, Mr. Walton, and Mr. Price,—one especially by the latter operator, in which, after the removal of the head and neck of the thigh bone, there was not only very considerable power of progression, but the power of balancing the body on the mutilated limb alone ; and 2nd, that a mutilated limb is generally better than its entire loss.

Mr. Bishop, in a paper deserving consideration, insisted upon the superior value of the physiological mode of treating lateral curvature,—especially that form which is the result of the action of mechanical forces on the spinal column,—over the mechanical modes now usually employed.

The method of treating strictures of the urethra by potassa fusa, as originally suggested by Home and Whately, has again received the earnest recommendation of Mr. Wade. After other methods, such as the ordinary dilators, those of Mr. Wakley and Mr. Holt, and that by Mr. Syme, have failed, Mr. Wade recommends the application of this caustic as in the least degree hazardous, and often effectual. I cannot help remarking that, in recommending this method, Mr. Wade speaks of it as "an adjuvant" to dilatation ; and that, in the whole of his remarks, he is free from a pedantic predilection in its favour, and fair to all who have their own peculiar plans of treating this most intractable disease at heart. The confirmation of Mr. Wade's views, by that diligent and honest cultivator of his profession,—Henry Smith,—is not a slight tribute to their worth. In cases which do not yield to dilatation by the ordinary means, Mr. Henry Thompson, with an authority possessed by no other English writer on this subject,

recommends Civiale's "internal incisions," in preference to the external incision, advocated by Professor Syme. Mr. Thompson, like Mr. Wade, has no predilection for any particular method of treating this disease, but is desirous of "utilizing" all. In the course of discussion, Mr. Birkett said that he had been in the habit frequently of dividing strictures anterior to the scrotum, and had never seen any bad results from the practice. From the discussions on this subject one practical point seemed to be unanimously approved; viz., that an operation for the immediate relief of a stricture, whether by caustic or incision, ought in no instance to be looked upon as a *final* measure.

The profession is indebted to one of our Society—Mr. Baker Brown—for the successful efforts he has made to systematize and perfect the surgery of the perinæum. Mr. Brown has thus greatly distinguished himself; and, from season to season, he has laid before the Fellows the fruits of his extensive experience and suggestive mind. In a recent contribution, Mr. Brown has shown that the lithotomy position is the best for perinæal operations; and that in cases of vesico-vaginal fistula, the *greatest* success can be obtained by the use of metallic futures with a bar-clamp, after a complete and careful denudation of the edges. The futures should be inserted *deeply* through the tissues, and careful attention paid to after-treatment, especially so far as the constant use of the catheter is concerned.

To one of the excellent and talented Secretaries of the Society it is indebted for being made acquainted with the fact, that hæmorrhage, from the bowels of infants, most generally arises from polypes, which Mr. Bryant has often detected within the sphincter. They are readily removed by means of a pair of scissors.

The present speaker called the attention of the Society to

the “physiological” *origin* of varicose veins of the lower extremities in opposition to the “mechanical;” alleging that, in the majority of instances, these veins first become dilated through a disturbance of the vascular system, contingent upon the earlier menstrual efforts, and *subsequently* become influenced by mechanical causes, such as utero gestation, and the narrow femoral orifice.

And not only from this review of a portion of the Society’s transactions, during the past session, am I justified in asserting that the Medical Society of London has kept pace with other Societies in promoting all that appertains to the progress and utility of our profession ; but, I think, Sir, by the emulation it has excited, through the prizes offered in obedience to the behest of Dr. Fothergill, it has also greatly tended to advance these ends. The work which I hold in my hand is the Essay on the “Structure of the Lung,” for which the last Fothergillian Medal was awarded to Dr. Waters, of Liverpool. I will not attempt even to glance at the many and important points which have been elucidated in the course of this valuable Essay. Its contents must be known to every one who is desirous of becoming familiar with all that modern Science has revealed in reference to this interesting subject. Never was prize more righteously bestowed; and never were honours more justly deserved.

It becomes me now to bring these desultory remarks to a close; but I cannot do so without alluding to the Presidency that has just terminated. John Hilton was chosen to that office, not only on account of his well-earned reputation, and of the high position which he so ably fills in one of the largest of our Metropolitan Hospitals, as well as in the Council of the Royal College of Surgeons, but also on account of the respect he has earned by the possession of those qualities which add, to the character of a man of science, the sterling ornaments of a

man of worth. Mr. Hilton's Presidency has been signalized by large and increasing attendances of Fellows, and by that combination of zeal and moderation in their proceedings, which must have left in the minds of all the delightful retrospect of profitable and pleasant memories. We lose you, Sir, as our President; but not without that homage of respect which the sense of great obligations accords to a distinguished benefactor.

I have endeavoured to shew that Medical Science is in real earnest, and that its past and its present are pledges for its future. But I shall be doing no violence to the feelings, even of its most enthusiastic votary, if, for a moment, I turn from the more grateful contemplations in which I have been indulging, to ask whether a still closer survey of its present position and the efforts it *has* made, and *is* making, might not awaken other sentiments than those of unalloyed congratulation.

If the Science of Medicine has been less uncorrupted by the influence of external agencies than its sister sciences, has it equally resisted the operation of those hurtful influences which have sprung up from time to time within its own confines? If its onward course has been promoted by a persistent obedience to the highest principles of developmental philosophy, has it suffered no perturbations from a too ready dalliance with those conceits and fancies that have sprung into existence, either as the results of spurious generalizations, or as the stock-in-trade of the artful but unscrupulous empiric? If its culture has served to awaken, in the heart of society, those sentiments which issue in generous deeds and noble heroisms, has it, on the other hand, had the effect of repressing, as it ought, those tendencies to selfishness, mistrust, and uncharitableness, which are too apt to lurk and batten even beneath its benignant shadow? I leave these questions, in order to ask another, viz: Has it fulfilled for society *all* that society could reasonably ex-

pect from its attainments, and from that disinterestedness of purpose amongst its cultivators, which a constant communion with nature in its simplest, as well as its sublimest forms, is calculated and supposed to impart? To such as are disposed to cavil at the present attainments of the Therapeutic Art, it might well be replied, that nothing is better calculated to check the impatience for great discoveries than a just idea of the patience and toil needed in order to realize the simplest; whilst every successive step towards the highest knowledge, but augments the number and increases the complexity of the observations and processes by which alone it can be attained. Each round of the ladder reveals the *little we know*, the *much* that lies beyond, mysterious and unknown.

“ All nature widens upwards ; evermore
The simpler essence lower lies ;
More complex is more perfect, owning more
Discourse, more widely wise.”

On the *other* hand, it would be presumptuous indeed to affirm that there are no short comings in the career which our Science has taken ; and that it *has* fulfilled its reasonable and legitimate obligations. There *are* great truths almost within its grasp, but as yet undiscovered ; and mankind are complaining and dying around us for want of them. Might not their discovery have been ante-dated, had our Science been ever true to its energies and resources ? The world's cry, like that of the “ Daughters ” of the “ Horseleach, ” — “ Give, give, ” as it seeks help from its revelations, is not a childish longing for an idle fantasy ; but a well grounded demand for an attainable good.

Not long since, in the House of Commons, Sir Cornewall Lewis is reported to have said that “ Medical Science, with regard to poisons, is unfortunately in an imperfect and uncertain state ; and that the same imperfection and uncertainty are

necessarily communicated to the legal questions with which they are connected." Should there have been an occasion for this rebuke? I do not ask this question disparagingly, in reference to the labours of those of our profession who are engaged in the pursuit of Toxicological Science;—for their earnestness, industry, and intelligence, leave no room for complaint;—but to shew the just and natural expectancy of society when it seeks enlightenment on subjects within the province of our Art, but which are, as yet, not so understood as to have yielded any practically available results.

And there are other subjects to which the same remarks may apply. I have spoken of Sanitary Science, and its glorious achievements and implied promises. But is its scheme so comprehensive, as it might and should be; and are we doing all in our power to perfect it? Whilst it is performing prodigies of usefulness in one direction, is it not overlooking fearful appeals for help in another? Whilst it is in successful conflict with fever and pestilence, and even with the inherited pests of man's existence, has it not, as yet, overlooked the fact that the sacrificial fires to "Moloch" are not yet extinct; and that, in this country of unparalleled luxury and abundance, thousands of children are dying daily from want of the common necessities of life, as well as from the heartlessness of task-masters?

But I will allude, for a moment, to another topic, as an illustration of the questions which daily observation is forcing on the attention of our profession. Are we shaping the practical department of our Art sufficiently in accordance with, and dependence upon, those laws of the organization, which it is safe to obey, but hazardous, in the extreme, to violate? Are we sufficiently sceptical as to the real value of that which we term *knowledge*, and its relation to *truth*? Have we (to bring these questions home) a definite or correct idea of the nature of disease? and do we not rather regard it in the light of an hap-

hazard innovation than in that of a re-adjustment of the constituent elements of the system in conformity with a new type necessitated by a widening deviation from its original and healthy condition? If it were in our power to substitute a healthy for a dilated heart, or a flow for a rapid beat, in the living organism, should we, *leaving its latent but associated disorders unrecognised, and therefore untouched, in all probability*, mend its condition or improve its powers? And, when we remove abnormal growths or other diseased products, as, for instance, an enlarged ovary or a carious joint, are we always sure that we are acting in conformity with the dictates of a sound doctrine, and that we are not sometimes removing a *quasi* supplemental organ. The oft recurrence of such diseases seems to reproach us for a violation of the laws which ordained their existence; and when a cancer removed again and again from innocent parts, has been observed at length to develop itself where the caustic or the knife cannot reach it, does it not awaken a suspicion, at least, that nature has vindicated its sovereign power, but with more terrible consequences, to act in accordance with those exigencies which a depraved constitution has established? I doubt much whether the relation of "objective" to "subjective" disease is as yet so understood, or its import sufficiently appreciated; and whether we are not too apt, by an indiscreet interference with the *one*, to render the *other* more formidable by the necessity for that still further and more complex re-adjustment of the economy, which its fresh disturbance must have demanded. That there is an abundant and fruitful source of profitable enquiry, opened by these and analogous considerations, I beg most humbly to submit: and, until that enquiry be entered upon, will not the practice of our profession be open to that chagrin and disappointment which too often follow our most honest efforts; and, in the same ratio, will not the real Physician be supplanted by the charlatan?

In conclusion, let me call your minds to a few thoughts in allusion to the immediate object of our gathering. We meet to celebrate the oldest Medical Society of this Metropolis. It should never be forgotten by the Fellows of the Medical Society of London, or of any other Society, that its existence entails responsibilities and obligations upon them, on the fulfillment of which rest its relative character and position amongst kindred institutions. It is demanded of a Society, that it accomplishes *more* than it is within the power, through their dissipated efforts, of its respective members to accomplish. Hence they have been instituted for purposes *too* large and important to be achieved by any amount of individual and isolated effort. The Royal Society was established for the promotion of *natural*, in opposition to *super-natural* science, at a time when the former was well nigh extinguished by the dominancy which the arts of witchcraft and magic had obtained over the human mind. The French Academy, and that of St. Petersburg, founded by Catherine, were designed to promote analogous ends. The "Society of Arts" arose to "encourage arts, manufactures, and commerce," when, but for the impulse which these received from a combination of such gifted men as Shipley, Lords Folkestone, and Romney, and Sir Stephen Hales, they must have languished beneath the withering frivolities and oppressions of the age. Then, Sir, Societies are *not* true to their resources or to their ends that do not contemplate higher objects than any that can be obtained by other means.

And if the seventeenth century stood in need of such help as the establishment of Societies, such as these, afforded it; surely the nineteenth needs it too. If there were darkness and superstition to be dispelled *then*, I think I am not wrong in saying that, with an increase of intellectual energy and illumination, there is comparatively as much, if not more, moral and spiritual gloom *now*. If a century and a half ago, Sir

John Floyer sent the infant lexicographer to Queen Anne to be "touched for the Evil," we have in our days the humiliating spectacle of men, who have been trained in the highest seats of learning, and who have even sipped at brooks that "flow fast by the oracles of God," endeavouring to disseminate a belief in the most debasing dogmas;—a belief in demoniacal agency through the medium of "table turning" "and spirit rapping;" in "coming tribulations," as well as in the silly and vulgar conceits of the disciples of Mesmer and Hahnemann;—and mankind were never more eager to become their dupes.

And not only so; but as death has removed from the world such men as Humboldt and Macaulay, and, from us, a Bright, a Travers, a Müller, a Boyer, a Todd, and an Alexander, it behoves us to think how the weight of their loss is to be counteracted. It is true we have enlarged schemes of Medical Education; and, *as it should be*, the requirement of *higher* tests of general competency for admission into the lists of our profession; but, at the same time, the circle from which the future Hunters and Coopers, Brights, Brodies, and Lawrences, are to spring, has been gradually narrowing, that *now* it might be said to be represented by a small division in the schedule of the Income Tax Assessor. Is this a *wise* policy? Is it not the reverse of that which, of old, helped to confer imperishable glory on the crowns of Olympia or of the Capitol; and, in recent times, has furnished Lord Campbell with such glowing materials for the "Lives" of those who have adorned the Bench and Bar? Should not the highest posts and honours of every profession be open to *all*, without any prohibitory dues, but those of intelligence, learning, and integrity?

These considerations throw a larger amount of responsibility upon existing Societies. The tasks which the age allots them they *must* do, or make way for others that *will* do them.

With regard to that Society which we are now commemo-

rating, I believe I am under no misapprehension in affirming that the spirit by which it is animated is in more active strife, more eager aspiration, and more determined endeavour than it has ever been, to sustain its traditional reputation, and to meet its augmenting responsibilities as well to society at large, as to the profession to which it belongs. I believe that it is honestly endeavouring to throw off every shackle that those oppressors of united effort—routine and red-tapism—might have fastened upon it, as they do upon most kindred institutions; and that, amongst its Fellows, there is a strong and dominant desire, that its Councils be guided by that wisdom and purity of motive, which will secure for it a higher career of honour and usefulness than any upon which it has entered.

To its Fellows, as well as to the Members of our profession at large, I would, in parting, remark, that for their busy and eventful lives, there is no equivalent to the mitres, and the coronets, and the gilded fortunes which crown and reward the career of successful aspirants in other fields of struggle and triumph. It has been said of duty as of virtue, that “it is its own reward.” It may be so; but of this I am persuaded, that as the most meritorious labours are not always followed by a corresponding sense of self-gratulation, as the wisest men are often more humbled by a sense of their infirmities and shortcomings than raised by that of their successes, and, as in the distribution of *its* escutcheons the world is not always true to the dictates of an unerring wisdom; so for a life of toil, and self-denial, and usefulness, there is elsewhere an æon of recompense in store. The valour of the tired soul, the instincts of man’s nature, the interests of the race, and the dictates of religion, alike attest the truth and reasonableness of this conviction.

The last year has witnessed in our metropolis a tardily-rendered but well-deserved ovation to the memory of one of England’s most gifted sons.

For more than half a century the mortal remains of John Hunter had been allowed to slumber amongst the tenants of the lowly churchyard of St. Martin's. But they were destined, perchance by their affinity with the kindred dust of nobler natures, to a higher sanctuary; and they now repose beneath the arches of that hallowed shrine, which guards and consecrates the ashes of the eldest sons alike of Science and of Song.

And if piety, in unison with the holier sentiments of the human soul, accords to the perishable and perishing fabric of gifted men, as *its* highest meed of homage, a resting place in earth's most solemn fanes, shall we doubt—shall we *not* be assured—that some recompense will be made to the released spirit by the award of a niche in that Temple “not made with hands, eternal in the heavens?” Thus the strivings and destinies of mortality *may* furnish an emblem which shall give constancy and hope to the children of toil, when they fail to find, even in the consciousness of having fulfilled their duty, a recompense that can raise their spirits above the weariness it entails.

“The *past* is a dim, but indubitable fact; the *future* too is one, only, perhaps, dimmer; nay, properly, it is the same fact in new dress and development.”

“For though fierce travails, though wide seas and roaring gulphs lie before us,” says a gifted writer, “is it not something if a load-star, in the eternal sky, do once more disclose itself; an everlasting light, shining through all cloud-tempests and roaring billows, ever as we emerge from the trough of the sea; the blessed beacon far off on the edge of far horizons, toward which we are to steer incessantly for life? * * * There lies the heroic promised land :—

‘There dwells the great Achilles, whom we knew’;—
Thither, we.

